

**Polymerases for Analyzing or Typing Polymorphic
Nucleic Acid Fragments and Uses Thereof**

ABSTRACT

The present invention provides methods for use in identifying, analyzing and typing polymorphic DNA fragments, particularly minisatellite, microsatellite or STR DNA fragments. In particular, the invention provides methods using DNA polymerases, more particularly thermostable DNA polymerases, and most particularly *Thermotoga* polymerases or mutants or derivatives thereof, whereby minisatellite, microsatellite or STR DNA molecules may be amplified and analyzed for polymorphisms. The invention also relates to polymerases having reduced, substantially reduced or eliminated ability to add non-template 3' nucleotides to a synthesized nucleic acid molecule. In accordance with the invention, such reduction or elimination may be accomplished by modifying or mutating the desired polymerase.

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